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Patent 7,437,521

PATENT

IN UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.: 7,437,521

Docket No: 1376.733US1

Issue Date: October 14, 2008

Patentee: Steven L. Scott et al.

Customer No.: 21186

Confirmation No.: 4093

Title MULTISTREAM PROCESSING MEMORY-AND BARRIER-  
SYNCHRONIZATION METHOD AND APPARATUSREQUEST FOR CERTIFICATE OF CORRECTION

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

ATTN: CERTIFICATE OF CORRECTION BRANCH

It is requested that a Certificate of Correction be issued correcting printing errors appearing in the above-identified United States patent. A copy of the text of the Certificate in the suggested form are enclosed.

Pursuant to 1.20(a), please charge Deposit Account No. 19-0743 in the amount of \$100.00.

Issuance of the Certificate of Correction would neither expand nor contract the scope of the claims as properly allowed, and re-examination is not required.

The Examiner is authorized to charge any additional fees or credit overpayment to Deposit Account No.19-0743.

Respectfully Submitted,

Certificate

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SCHWEGMAN, LUNDBERG & WOESSNER, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402  
(612) 373-6900

of Correction

Date:

Dec 1, 2008

By:

Thomas F. Brennan

Thomas F. Brennan

Reg. No: 35,075

TFB:raq

CERTIFICATE UNDER 37 CFR § 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450, on this 2 day of December 2008

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Signature

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Steven L. Scott et al.

Examiner: Savla, Arpan

Patent No.: 7,437,521

Group Art Unit: 2185

Issue Date: October 14, 2008

Docket No: 1376.733US1

Title: MULTISTREAM PROCESSING MEMORY-AND BARRIER-SYNCHRONIZATION METHOD  
AND APPARATUS

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
ATTN: CERTIFICATE OF CORRECTION BRANCH

We are transmitting herewith the attached:

☒ Authorization to charge Deposit Account No. 19-0743 in the amount of \$100.00 to cover the Certificate of Correction fee.

☒ Request for Certificate of Correction.(1pg)

☒ Certificate of Correction Form - PTO-1050 (11pgs)

☒ A return postcard.

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SCHWEGMAN, LUNDBERG & WOESSNER, P.A.  
Customer No: 21186

By: Thomas F. Brennan  
Name: Thomas F. Brennan  
Reg. No.35,075  
TFB:CMG:raq

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Name

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 7,437,521

Page (1) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On page 2, under "Other Publications", in column 2, line 13, delete "dimenstional" and insert - - dimensional - -, therefor.

On page 2, under "Other Publications", in column 2, line 47, delete "Journakl" and insert - - Journal - -, therefor.

On page 3, under "Other Publications", in column 1, line 13, before "Architectures" delete "Parallel".

On page 3, under "Other Publications", in column 1, line 41, delete "Spacial" and insert - - Spatial - -, therefor.

On page 3, under "Other Publications", in column 2, line 50, after "Office" insert - - Action - -.

On page 3, under "Other Publications", in column 2, line 52, after "Office" insert - - Action - -.

On page 4, under "Other Publications", in column 2, line 52, delete "OARN" and insert - - NOAR - -, therefor.

On page 4, under "Other Publications", in column 2, line 53, delete "AL1owance" and insert - - Allowance - -, therefor.

In column 8, line 13, delete "useg" and insert - - used - -, therefor.

In column 9, line 23, delete "[A]<sub>2</sub>" and insert - - [A]<sup>2</sup> - -, therefor.

In column 9, line 40, delete "and exclusive" and insert - - and-exclusive - -, therefor.

In column 14, line 26, delete "LCIk" and insert - - Lclk - -, therefor.

In column 14, line 55, delete "VS118" and insert - - VS 118 - -, therefor.

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 7,437,521

Page (2) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 16, line 13, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 17, line 8, delete "LCLK," and insert - - Lclk, - -, therefor.

In column 18, line 59, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 18, line 64, delete "LCLK" and insert - - Lclk - -, therefor.

In column 19, line 4, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 19, line 10, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 19, line 17, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 20, line 40, delete "LCLK" and insert - - Lclk - -, therefor.

In column 20, line 40, delete "v issues" and insert - - vissues - -, therefor.

In column 20, line 41, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 20, line 49, delete "LClk" and insert - - Lclk - -, therefor.

In column 21, line 22, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 21, line 26, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 21, line 60, delete "LCLK" and insert - - Lclk - -, therefor.

In column 21, line 61, delete "LCLK." and insert - - Lclk - -, therefor.

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PATENT NO : 7,437,521

Page (3) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 22, line 5, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 22, line 7, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 22, line 15, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 23, line 19, delete "LCLK" and insert - - Lclk - -, therefor.

In column 23, line 20, delete "LCLK," and insert - - Lclk, - -, therefor.

In column 23, line 31, delete "LCLK." and insert - - Lclk. - -, therefor.

In column 23, line 51, delete "(VMAP0\_VMAP31)" and insert - - (VMAP0-VMAP31) - -, therefor.

In column 24, line 42, delete "LCLK" and insert - - Lclk - -, therefor.

In column 24, line 43, delete "LCLK" and insert - - Lclk - -, therefor.

In column 24, line 48, delete "LCLK" and insert - - Lclk - -, therefor.

In column 24, line 54, delete "LCLK" and insert - - Lclk - -, therefor.

In column 24, line 59, delete "LCLK" and insert - - Lclk - -, therefor.

In column 24, line 63, delete "LCLK" and insert - - Lclk - -, therefor.

In column 24, line 65, delete "LCLK" and insert - - Lclk - -, therefor.

In column 25, line 3, delete "LCIk" and insert - - Lclk - -, therefor.

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PATENT NO : 7,437,521

Page (4) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 25, line 8, delete "LCIk" and insert - - Lclk - -, therefor.

In column 25, line 32, delete "LCIk" and insert - - Lclk - -, therefor.

In column 25, line 32, delete "v issues" and insert - - vissues - -, therefor.

In column 25, line 35, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 25, line 41, delete "LCIk" and insert - - Lclk - -, therefor.

In column 25, line 45, delete "(VBFlage)" and insert - - (VBFlag) - -, therefor.

In column 25, line 54, delete "VBFlag" and insert - - VBFlag - -, therefor.

In column 26, line 8, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 26, line 12, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 26, line 41, delete "LCIks" and insert - - Lclks - -, therefor.

In column 26, line 41, after "two" delete "LCIks." and insert - - Lclks. - -, therefor.

In column 26, line 51, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 27, line 3, after "instructions" insert - - . - -.

In column 27, line 60, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 28, line 9, delete "LCIk." and insert - - Lclk. - -, therefor.

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 7,437,521

Page (5) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 28, line 19, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 28, line 31, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 28, line 33, delete "LCIk," and insert - - Lclk, - -, therefor.

In column 28, line 34, delete "LCIk" and insert - - Lclk - -, therefor.

In column 28, line 62, delete "VBFlag" and insert - - VBFlag - -, therefor.

In column 28, line 63, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 29, line 9, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 29, line 18, delete "LCIk" and insert - - Lclk - -, therefor.

In column 29, line 24, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 29, line 32, delete "(VTLB0\_VTLB3)" and insert - - (VTLB0-VTLB3) - -, therefor.

In column 30, line 42, delete "VMS126." and insert - - VMS 126. - -, therefor.

In column 30, line 58, delete "(LBUF0\_LBUF7)" and insert - - (LBUF0-LBUF7) - -, therefor.

In column 31, line 23, delete "VBFlag" and insert - - VBFlag - -, therefor.

In column 31, line 55, delete "LCLK" and insert - - Lclk - -, therefor.

In column 31, line 62, delete "LCLK." and insert - - Lclk. - -, therefor.

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PATENT NO : 7,437,521

Page (6) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 32, line 6, delete "fourVTLBs" and insert - - four VTLBs - -, therefor.

In column 32, line 6, delete "(VTLB0\_VTLB3)." And insert - - (VTLB0-VTLB3). - -, therefor.

In column 32, line 64, delete "EFU" and insert - - EIU - -, therefor.

In column 33, line 3, delete "(6.5)" and insert - - (6 . . . 5) - -, therefor.

In column 33, line 23, delete "LCIk," and insert - - Lclk, - -, therefor.

In column 33, line 29, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 37, line 3, delete "LCIk" and insert - - Lclk - -, therefor.

In column 37, line 10, delete "LCIk." and insert - - Lclk. - -, therefor.

In column 37, line 14, delete "LCIk," and insert - - Lclk, - -, therefor.

In column 38, line 16, delete "Q1240." and insert - - Q1 240. - -, therefor.

In column 38, line 43, delete "Instruction Processing" and insert - - Instruction-Processing - -, therefor.

In column 39, line 61, delete "Lsync V,S" and insert - - Lsync V, S - -, therefor.

In column 40, line 5, delete "Lsync\_V\_s" and insert - - Lsync\_v\_s - -, therefor.

In column 40, line 11, delete "lsync\_V\_s\_flag" and insert - - lsync\_v\_s\_flag - -, therefor.

In column 41, line 27, delete "theVU" and insert - - the VU - -, therefor.

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PATENT NO : 7,437,521

Page (7) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 41, line 28, delete "V 113" and insert - - VU 113 - -, therefor.

In column 41, line 42, delete "sendsthe" and insert - - sends the - -, therefor.

In column 41, line 42, delete "V 113" and insert - - VU 113 - -, therefor.

In column 41, line 54, delete "I Msync" and insert - - Msync - -, therefor.

In column 46, lines 43-44, delete ""Timeouts"" and insert - - "Time-outs" - -, therefor.

In column 48, line 14, delete "thatfollow" and insert - - that follow - -, therefor.

In column 60, line 57, delete "newval (ValueAR(i, L))" and insert - - newval(ValueAR(i, L)) - -, therefor.

In column 61, line 41, delete "is" and insert - - 1s - -, therefor.

In column 61, line 51, delete "0000" and insert - - 000 - -, therefor.

In column 64, line 54, delete "S type" and insert - - S-type - -, therefor.

In column 65, line 48, delete "S type" and insert - - S-type - -, therefor.

In column 68, line 38, delete "gsync" and insert - - Gsync - -, therefor.

In column 68, line 39, delete "gsync" and insert - - Gsync - -, therefor.

In column 68, line 42, delete "gsync" and insert - - Gsync - -, therefor.

In column 68, line 44, delete "gsync" and insert - - Gsync - -, therefor.

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 7,437,521

Page (8) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 68, line 48, delete "gsync" and insert - - Gsync - -, therefor.

In column 68, line 51, delete "gsync" and insert - - Gsync - -, therefor.

In column 68, line 52, delete "gsync" and insert - - Gsync - -, therefor.

In column 68, line 59, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 2, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 4, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 14, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 17, delete "gsync." and insert - - Gsync. - -, therefor.

In column 69, line 25, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 27, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 29, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 31, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 34, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 69, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 43, delete "gsync" and insert - - Gsync - -, therefor.

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Page (9) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 69, line 45, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 47, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 58, delete "gsync" and insert - - Gsync - -, therefor.

In column 69, line 60, delete "gsync" and insert - - Gsync - -, therefor.

In column 70, line 3, delete "gsync" and insert - - Gsync - -, therefor.

In column 70, line 7, delete "gsync." and insert - - Gsync. - -, therefor.

In column 70, line 21, delete "gsync" and insert - - Gsync - -, therefor.

In column 70, line 22, delete "gsync" and insert - - Gsync - -, therefor.

In column 70, line 25, delete "gsync" and insert - - Gsync - -, therefor.

In column 70, line 27, delete "gsync" and insert - - Gsync - -, therefor.

In column 70, line 30, delete "gsync" and insert - - Gsync - -, therefor.

In column 70, line 34, delete "gsync" and insert - - Gsync - -, therefor.

In column 71, line 42, in Claim 1, delete "instruction" and insert - - instruction, - -, therefor.

In column 71, line 46, in Claim 1, before "plurality" delete "first".

In column 71, line 54, in Claim 1, after "of" insert - - execution of - -.

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PATENT NO : 7,437,521

Page (10) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 72, line 23, in Claim 5, before "plurality" delete "first".

In column 72, line 37, in Claim 5, delete "circuits;" and insert - - circuits; and - -, therefor.

In column 72, line 40, in Claim 5, after "tion" delete "based on a second memory operation instruction".

In column 72, line 56, in Claim 5, delete "instruction processing" and insert - - instruction-processing - -, therefor.

In column 72, line 58, in Claim 5, delete "S type" and insert - - S-type - -, therefor.

In column 73, line 28, in Claim 7, delete "circuits;" and insert - - circuits; and - -, therefor.

In column 73, lines 31-32, in Claim 7, after "instruction" delete "based on a second memory operation instruction".

In column 73, line 36, in Claim 7, delete "queue;" and insert - - queue; and - -, therefor.

In column 73, line 37, in Claim 7, before "means" delete "and".

In column 73, lines 61-67, in Claim 8, delete "a plurality of Lsync queues connected to the memory interface, including a first Lsync queue and a second Lsync queue,

wherein each of the plurality of Lsync queues holds pending memory requests and enforces an ordering in the commitment of the pending memory requests to memory;" and insert - - a plurality of Lsync queues connected to the memory interface, including a first Lsync queue and a second Lsync queue, wherein each of the plurality of Lsync queues holds pending memory requests and enforces an ordering in the commitment of the pending memory requests to memory; - -, therefor.

In column 74, line 49, in Claim 8, delete "S type" and insert - - S-type - -, therefor.

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Page (11) of 11

DATED : October 14, 2008

INVENTOR(S) : Scott et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 74, line 50, in Claim 8, delete "S type" and insert - - S-type - -, therefor.

In columns 75-76, lines 25-32 and lines 1-3, in Claim 10, delete "inserting one or more memory requests into at least one of the Lsync queues based on a

second memory operation instruction executed in one of the instruction-processing circuits; processing memory requests from the first Lsync queue; selectively halting further processing of memory requests from the first Lsync queue based on the first Lsync synchronization marker reaching a predetermined point in the first Lsync queue until the corresponding second Lsync synchronization marker reaches a predetermined point in the second Lsync queue," and insert - - inserting one or more memory requests into at least one of the Lsync queues based on a second memory operation instruction executed in one of the instruction-processing circuits;

processing memory requests from the first Lsync queue; selectively halting further processing of memory requests from the first Lsync queue based on the first Lsync synchronization marker reaching a predetermined point in the first Lsync queue until the corresponding second Lsync synchronization marker reaches a predetermined point in the second Lsync queue; - -, therefor.

In column 76, line 21, in Claim 10, delete "S type" and insert - - S-type - -, therefor.

In column 76, line 22, in Claim 10, delete "S type" and insert - - S-type - -, therefor.

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